

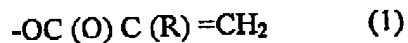
In the claims:

Please cancel claims 4 and 9 without prejudices to their reentry at some later date.

1. (currently amended) A production method of a branched polymer ~~which comprises, comprising performing living radical polymerization to obtain a macromonomer (I), said macromonomer (I) being a vinyl polymer obtained by radical polymerization and terminally having one polymerizable carbon-carbon double bond-containing group per molecule, and~~ polymerizing said macromonomer (I);

wherein the macromonomer (I) has a weight average molecular weight (Mw)-to-number average molecular weight (Mn) ratio (Mw/Mn) of less than 1.8 as determined by gel permeation chromatography,

wherein the polymerizable carbon-carbon double bond-containing group is represented by the general formula (1):



wherein R represents a hydrogen atom or a monovalent organic group containing 1 to 20 carbon atoms.

2. (Cancelled)

3. (Previously presented) The production method to Claim 1 wherein R is a hydrogen atom or a methyl group.

4. (Cancelled)

5. (Currently amended) The production method according to Claim [[4]] 1, wherein the living radical polymerization is atom transfer radical polymerization.

6. (Original) The production method according to Claim 5, wherein the atom transfer radical polymerization is carried out using, as a catalyst, a transition metal complex whose central metal is an element of the group 7, 8, 9, 10 or 11 of the periodic table.

7. (Original) The production method according to Claim 6, wherein the metal complex to

serve as a catalyst is a complex of a metal selected from the group consisting of copper, nickel, ruthenium and iron.

8. (Original) The production method according to Claim 7, wherein the catalyst metal complex is a copper complex.

9. (Cancelled)

10. (Previously presented) The production method according to Claim 1, wherein the main chain of the macromonomer (I) is a (meth) acrylic polymer.

11. (Original) The production method according to Claim 10, wherein the polymer main chain of the macromonomer (I) is an acrylic ester polymer.

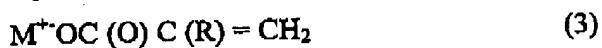
12. (Previously presented) The production method according to Claim 1, wherein the main chain of the macromonomer (I) is a styrene type polymer.

13. (Previously presented) The production method according to Claim 1, wherein the macromonomer (I) is obtained by substituting a compound having a radical-polymerizable carbon-carbon double bond for a terminal halogen group of a vinyl polymer.

14. (Previously presented) The production method according to Claim 13, wherein the macromonomer (I) is obtained by reacting a vinyl polymer having a terminal halogen group represented by the general formula (2):



wherein  $\text{R}^1$  and  $\text{R}^2$  each represents a group attached to an ethylenically unsaturated group of a vinyl monomer and X represents a chlorine, bromine or iodine atom, with a compound represented by the general formula (3):



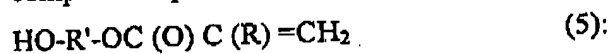
wherein R represents a hydrogen atom or a monovalent organic group containing 1 to 20 carbon atoms and  $\text{M}^+$  represents an alkali metal or a quaternary ammonium ion, for substitution for the terminal halogen group.

15. (Previously presented) The production method according to Claim 1, wherein the macromonomer (I) is obtained by reacting a hydroxy-terminated vinyl polymer with a compound represented by the general formula (4):



wherein R represents a hydrogen atom or a monovalent organic group containing 1 to 20 carbon atoms and X represents a chlorine, bromine atom or a hydroxy group.

16. (Previously presented) The production method according to Claim 1, wherein the macromonomer (I) is obtained by reacting a hydroxy-terminated vinyl polymer with a diisocyanate compound and reacting the remaining isocyanato group with a compound represented by the general formula (5):



wherein R represents a hydrogen atom or a monovalent organic group containing 1 to 20 carbon atoms and R' represents a divalent organic group containing 2 to 20 carbon atoms.

17. (Previously amended) A production method according to Claim 1, wherein the macromonomer (I) has a number average molecular weight of not less than 3,000.

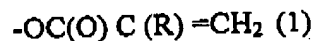
18-19. (Cancelled).

20. (Currently amended) A production method of a branched polymer ~~which comprises polymerizing comprising performing radical polymerization to obtain~~ a macromonomer (I),

said macromonomer (I) being a vinyl polymer ~~obtained by radical polymerization and~~ terminally having one polymerizable carbon-carbon double bond-containing group per molecule, and

~~wherein polymerization of the polymerizing said~~ macromonomer (I) is conducted in the manner of living radical polymerization,

wherein the polymerizable carbon-carbon double bond-containing group is represented by the general formula (1):



wherein R represents a hydrogen atom or a monovalent organic group containing 1 to 20 carbon atoms.

21. (Original) The production method according to Claim 20, wherein the living radical polymerization is atom transfer radical polymerization.

22. (Original) The production method according to Claim 21, wherein the atom transfer radical polymerization is carried out using, as a catalyst, a transition metal complex the central metal of which is an element of the group 7, 8, 9, 10 or 11 of the periodic table.

23. (Original) The production method according to Claim 22, wherein the catalyst metal complex is a complex of a metal selected from the group consisting of copper, nickel, ruthenium and iron.

24. (Original) The production method according to Claim 23, wherein the catalyst metal complex is a copper complex.

25. (Previously presented) The production method according to Claim 1, wherein polymerization of the macromonomer (I) is initiated by active radiation.

26. (Previously presented) The production method according to Claim 1, wherein polymerization of the macromonomer (I) is initiated by heating.

27. (Previously presented) The production method according to Claim 1, wherein polymerization of the macromonomer (I) is conducted in the manner of anionic polymerization.

28. (Previously presented) The production method according to Claim 1, wherein homopolymerization of the macromonomer (I) gives a stellar polymer.

29. (Previously presented) The production method according to Claim 1, wherein the copolymerization of the macromonomer (I) with a copolymerizable monomer (II) other than said macromonomer (I) gives a graft copolymer.

30. (Original) The production method according to Claim 29, wherein the weight ratio between the macromonomer (I) and the monomer (II) is 95:5 to 5:95.

31. (Previously presented) The production method according to Claim 1, wherein copolymerization of the macromonomer (I) with a polyfunctional compound having two or more polymerizable carbon-carbon double-bond-containing groups per molecule gives a cross-linked polymer.

32. (Original) The production method according to Claim 31, wherein the polyfunctional compound having two or more polymerizable carbon-carbon double bond-containing groups per molecule is a polymer (III) terminally having two or more polymerizable carbon-carbon double-bond-containing groups per molecule.

33. (Previously presented) A branched polymer obtained by the production method according to Claim 1.
34. (Original) A thermoplastic elastomer comprising the polymer according to Claim 33.
35. (Original) A shock resistance improver comprising the polymer according to Claim 33.
36. (Original) A pressure sensitive adhesive comprising the polymer according to Claim 33.

Please add the following new claims:

37. (New) The production method according to claim 1 wherein said step of polymerizing said macromonomer (I) is conducted in the manner of radical polymerization.
38. (New) The production method according to claim 1 wherein said step of polymerizing said macromonomer (I) is conducted in the manner of living radical polymerization.